Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of measurement by scanning comprising:

providing a scanning measurement system having a sample holder and a relatively movable scanning device, the sample holder having a rotatable or longitudinal axis;

using the scanning device to perform performing a scan of at least a part of an object located on the sample holder and of at least a portion of a surface of the sample holder to obtain measurement data;

using at least a portion of the measurement data from the scan, establishingscan to establish an orientation of a plane of the sample holder and thereby establishing any misalignment or non-colinearity of the sample holder with respect to the rotatable or longitudinal axis; and

interpreting at least a portion of the measurement data from the scan using the orientation of the plane of the sample holder in order to correct the measurement data for any established misalignment or non-colinearity of the sample holder with respect to the rotatable or longitudinal axis.

2. (Currently Amended) A method according to claim 1 wherein the orientation of the plane of the sample holder is established by defining a plane of the sample holder.

3. (Currently Amended) A method according to claim 2 wherein the plane of the sample holder in which orientation is established is limited by boundaries.

4. (Currently Amended) A method according to claim 1 wherein the orientation of the plane of the sample holder is established by extracting at least three measurements.

5. (Currently Amended) A method according to claim 1 wherein the orientation of the plane of the sample holder is established by extracting data for at least 240° around the surface of the sample holder.

6. (Currently Amended) A method according to claim 1 wherein the orientation of the plane of the sample holder is established by measuring during a single process.

7. (Currently Amended) A method according to claim 1 wherein the orientation of the plane of the sample holder is established by measuring during more than one discrete processes.

8. (Currently Amended) A method according to claim 1 wherein the orientation of the plane of the sample holder is established within a defined vertical envelope with respect to the sample holder.

9. (Currently Amended) A method of measurement by scanning comprising:

providing a scanning measurement system having a sample holder and a relatively movable scanning device, the sample holder having a rotatable or longitudinal axis;

performing a datum scan with the scanning device to obtain measurement data for establishing establish any misalignment or non-colinearity of the sample holder with respect to the rotatable or longitudinal axis;

performing a sample scan with the scanning device of a sample to obtain measurement data of the sample; and

interpreting the measurement data of the sample from the sample scan using any misalignment or non-colinearity data obtained from the datum scan in order to correct the measurement data of the sample for any established misalignment or non-colinearity of the sample holder;

wherein the scanning measurement system automatically carries out the datum scan and the sample seans scan.

-3-

10. (Currently Amended) A method of measurement by scanning comprising:

providing a scanning measurement system having a sample holder and a relatively movable scanning device, the sample holder having a rotatable or longitudinal axis;

performing a datum scan with the scanning device to obtain measurement data for establish establishing any misalignment or non-colinearity of the sample holder with respect to the rotatable or longitudinal axis;

performing a sample scan with the scanning device of a sample to obtain measurement data of the sample; and

interpreting data from the sample scan using any established misalignment or non-colinearity data from the datum scan in order to correct the measurement data of the sample for any established misalignment or non-colinearity of the sample holder;

wherein both the datum scan and sample scans scan are carried out effectively as one scan.

11. (Currently Amended)   The method of scanning according to claim 1 wherein the scan of at least part of the object and the scan of at least a portion of the sample holder are conducted as a single scan.

12. (Currently Amended) The method of scanning according to claim 9 wherein the datum scan and the sample scan of a sample are conducted as a single scan.